Botanical Bulletin.

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PLANTAGO LANCEOLATA, L.—I have been watching, for some weeks past, a plant of common Ribwort, (*Plantago lanceolata*, L. which has interested me very much. The styles made their appearance, as is the habit of this genus, and seemed to be quite long for the species. After a time they began to bend down so that the stigma entered the tube of the corolla. and soon the whole style was coiled up in the corolla tube, remaining there for a day or more, in some instances, when it resumed its erect position. I then commenced to watch for the appearance of the stamens, but none made their appearance. As this seemed singular, I made close examination of the blossoms, to find stamens or anthers, for I could not imagine why the styles bent down into the corolla unless there were anthers present. But though I examined scores I failed to detect any sign of stamen or anther, except in a few instances a ligulate appendage was found in the place of the stamen, perhaps it might be considered a petaloid filament, but not the least sign of an anther was to be found.

Some of the spikes are quite well fertilized, which is not strange, some only partially so, and on some there is only one fertile ovary. This singular behavior of the styles has been in operation for weeks, going on in succession from the base to the summit of the spikes, so that very frequently on the same spike may be seen the coiled styles, below them those that have been coiled up but have become straight again, above them those that are developing, making, on the whole, a singular spectacle. Now what principle of instinct, or "natural selection" operated here? For evidently the stigmas were seeking after something that had not been supplied in the ordinary manner. I have watched many other plants of this species but none others have been found showing such variations, or any out of the usual line of development.

Have found a large number of spikes of the common plantain with leaves on the scape just below the flowers, many with branches as well as leaves, and quite a number with double spikes. In some specimens the spikes were very much divided, having as many as eight or ten branches.—N. COLEMAN, *Bloomfield, Conn.*

A REMARKABLE CHERRY TREE.—Mr. Wm. Ellis, of Gilead, Tolland Co., in this State, has a most remarkable cherry tree on his place. The tree is about ten inches in diameter, quite thrifty, and has for several years in succession borne two kinds of cherries, both choice fruit, one a light colored early cherry, the other a dark cherry that does not ripen till some time after the others are gone. The later kind does not blossom till some time after the others, and what seems a singular feature of this most singular freak of nature, the clusters of buds come out right by the side of the green cherries, and this is not confined to one branch or to one side of the tree, but is on all the branches all over the tree. Can not state the variety of the original stock, but am told great pains were taken in the grafting. If such a thing were possible one might imagine it the old stock asserting its rights through the new one's branches. Can you give any explanation of the phenomenon, or do you know of any like example?—N. COLEMAN.

All communications addressed to John M. Coulter, Hanover, Ind.

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VARIATION IN LEAVES.—On reading Dr. Engelmann's recent excellent publication on the Oaks of the United States, I was more than ever impressed with the uncertainty of specific characters, based on the lobing of leaves. Probably no order has as much variety in this respect as *Cupuliferæ*. I have repeatedly examined both divisions, the white oaks and the black oaks, and both have alike this tendency. In a recent visit to the nurseries of Mr. Meehan, near Germantown, Pa., where seedling oaks of many species are growing in great abundance, I found it almost an impossibility to get two of the same shape. He has *Q. aquatica* by the thousand, with leaves varying from almost linear, that could scarcely be distinguished from *Q. Phellos*, to lobed, much like our *Q. nigra*, and all the intermediate forms; and, too, all of them very unlike the mature leaves of *Q. aquatica* I have seen from the south. *Q. heterophylla*, of which some fine specimens have been detected near Woodbury, N. J., possesses this same tendency to change shape, some indeed coming near that of *Q. falcata*.

I remember collecting at Byberry, Pa., some fifteen years ago, leaves from a small shrub that were very curiously shaped, indeed, I could not determine it at all. Much to my surprise, a year or two afterward, it turned out to be *Morus rubra*. Thus it appears that the leaves on young plants are often very dissimilar to those on old or mature ones.

Some time ago I examined the *Sagittaria variabilis*, common along our river shores, and found the leaves in great variation, from acute to obtuse; long taper pointed to short and blunt; long, narrow lobes to broad, wide spreading ones; some with one lobe, others with none; the leaf stalk from a few inches in length to three feet; and all growing promiscuously in a space not more than twenty yards in diameter.

The *Onoclea sensibilis*, also presents a great variety of forms. In some fronds the shape is nearly that of an equilateral triangle; in others longer and tapering to a point; whilst in others with a very broad base. The pinnæ also, are sometimes nearly entire, or crenately notched, and pass through intermediate forms almost to pinnatifid, the lobes also being acute or obtuse. In September, 1875, I collected near Germantown, Pa., the var. *obtusilobata*, a very peculiar form, with the fruit dots quite conspicuous on the under surface, without the pinnæ losing their foliaceous character. The plant from which the figure of *O. obtusilobata*, Schkuhr, was taken, I learn from Prof. Gray, was possibly found near Lancaster, Pa.

The most wonderful example, however, that I have met with was in a specimen of *Verbascum Thapsus*, recently observed growing along a railroad in what is familiarly known as the "neck," below Philadelphia. There was but a single plant, and this its first year, consequently had only the radical leaves, but every one was *lobed* or *cut-toothed* in a curious manner. Some of the leaves measured twenty-two inches in length and from four to six in width, and the margins, besides being lobed were very wavy, even those from the center, that were just beginning to unfold, having the same peculiarity. It will be interesting to know whether the flowering stalk of next year, will develop in the same manner. *Lappa major*, is said to have been found sporting in this way, but I have never so met with it.—ISAAC C. MARTINDALE, *Camden, N. J.*

CURIOUS MANNER OF VERBENA URTICIFOLIA IN DISCHARGING THE COROLLA.—After giving the plant a little jar, in about one and a half to two minutes the flowers will be seen to fall fast. Upon minute examination with a pocket lens the corolla will be seen to be moving out from the calyx (that embraces it closely) very slowly at first, but soon quite fast and is pushed until it is quite free from it and falls to the ground. By the action of what organs this is accomplished I have been unable to discover, but probably by the straightening of the bent tube of the corolla itself, or some contracting movement of the calyx lobes. Now is a good time to observe the phenomenon. Will some botanist of leisure investigate and report

facts in the BOTANICAL GAZETTE. I have had opportunity to make no observations on other species of the genus for similar habits.—E. HALL, *Athens, Ill.*

CONOBEA MULTIFIDA, Benth.—Some time ago the Editor received for determination a plant from Mr. David Jones, of Kirkville, Ind. Without noticing anything peculiar about it he at once pronounced it *Conobea multifida*, and returned the name to Mr. Jones. The latter, however, was not satisfied and called the Editor's attention to some peculiarities which do not prevent it being *C. multifida*, but which nevertheless are very unusual and contrary to the accepted description. Nearly all the leaves are in *whorls of threes*, instead of being opposite and this peculiarity does not run simply through a single specimen, but through a whole patch. *Conobea* grows very abundantly here, but this arrangement of the leaves has not been noticed. The other peculiarity to which Mr. Jones calls attention has long been noted here and is in fact very constant. The flowers instead of being "greenish-white," are *purple* or *blue*. Such observations are of special interest because they cause slight modifications of specific descriptions and thus bring them nearer perfect accuracy.—ED.

OPUNTIA VULGARIS AND RAFINESQUII.—At a recent meeting of the Academy of Natural Sciences of Philadelphia, Mr. Isaac C. Martindale, of Camden, N. J., made some remarks upon the occurrence of the genus *Opuntia* in New Jersey. In the last edition of Gray's Manual three species are given; *O. vulgaris*, Mill., with its old range of "Massachusetts, southward, usually near the coast;" *O. Rafinesquii*, Engelm., "Wisconsin to Kentucky and westward;" and the western *O. Missouriensis*, DC. occurring in the borders of Wisconsin. Mr. Martindale proceeded to state that Dr. Geo. Engelmann in a recent examination of the genus, after comparing specimens from Massachusetts, New York, Pennsylvania and New Jersey, heretofore classed as *O. vulgaris*, determines them to be identical with *O. Rafinesquii*, and states that he has *O. vulgaris* only from the "Falls of the Potomac and South Carolina." Last June, Mr. Martindale collected near Haddonfield, N. J., specimens of *Opuntia*, which he determined to be *O. vulgaris*. Dr. Engelmann also pronounced it to be the true *O. vulgaris*. Mr. M. then made some interesting observations on the characters of the two species. He states that *O. vulgaris* has a pale green appearance, the flat joints obovate, with small ovate subulate leaves, stout and tapering from a broadish base, mostly less than one-fourth of an inch in length, and appressed to the joint, with a fascicle of minutely barbed bristles, and occasionally a spine in their axils; the flowers are sulphur yellow, the fruit smoothish, about an inch in length and half an inch in thickness, somewhat ventricose, or largest just above the middle and tapering to the base, with a depression at the top where the flower has fallen off, from one-eighth to one-quarter of an inch in depth. *Opuntia Rafinesquii* has rather larger flowers, occasionally with a reddish centre, more numerous petals, the fruit fully one and a half inches in length, with an elongated base, the depression in the top in the specimens examined not so deep as in *O. vulgaris;* the older joints have a darker green appearance, the leaves more slender, longer, from one quarter to three eighths of an inch in length, and spreading, and more frequently with the large spine, particularly about the top of joint. Mr. M. was contending not so much for the distinctness of the two species, as that if they are distinct they are both growing in New Jersey.—ED.

NOTES ON ACNIDA.—In the August number of the American Naturalist Dr. Gray has given a very interesting account of the genus *Acnida* and the confusion of its species. In the second edition of Gray's Manual of Botany we have but the Linnæan species, *A. cannabina*, and the section *Montelia* (under *Acnida*) of Moquin-Tandon set up as a genus. In the present note Dr. Gray says it was a sad oversight, "having confounded Moquin's *Montelia*, which has a small and indehiscent utricle, with his own *M. tamariscina*, the utricle of which dehisces transversely, and which likewise has far more slender fertile inflorescence." The object of the

present article is not only to correct this mistake but to direct the attention of all botanists, especially those near the seaboard, to the species of *Acnida*. The request is made that specimens be critically examined while fresh and that dried specimens, especially in good fruit, also be prepared and sent to the writer. The so-called *Montelia tamariscina* has been found this summer growing in great profusion upon tne banks of the Ohio river and both fertile and sterile plants were easily obtained, although the former is much later in getting itself ready for a good herbarium specimen. Although the species of most interest are not found here, the material that we have is being carefully watched. I wish to reproduce here Dr. Gray's proposed rearrangement of the genus *Acnida*, both to assist botanists in their search for the material requested, and because it makes some important changes in a puzzling family.

ACNIDA (*Acnide* Mitchell) Linn.

(1.) EUACNIDE. Utricle somewhat fleshy, indehiscent, large, *i. e.*, one and a half to two lines long.

A. RHYSSOCARPA, alias RUSOCARPA Michx. Fertile inflorescence very naked; the bracts not half the length of the fleshy utricle, the angles of which are not rarely rugose-tuberculated; stigmas comparatively short and slender-subulate. Salt marshes, New England to Georgia.

A. CANNABINA L. Fertile inflorescence slender or sometimes glomerate; utricle thinner and smaller, with acute and smooth angles, much exceeding the bracts; stigmas very long and filiform, almost plumosely hairy. Salt marshes and river-banks even beyond brackish water, New England to Georgia, West Indies (?), etc.

A. AUSTRALIS, n. sp. (*A. cannabina* Chapman, S. Flora.) Panicled spikes of the fertile inflorescence dense, linear-cylindrical; utricle smooth, thin, hardly at all fleshy, acute-angled, little if at all exceeding the imbricated bracts; stigmas setaceous, rather short. Florida, at Apalachicola, Dr. Chapman; Biscayan Bay, Dr. Palmer, coll. no. 462.

(2.) MONTELIA Moquin-Tandon. Utricle thin and small (half to two-thirds of a line long), punctate-rugose or roughish, indehiscent, equaled or exceeded by the cuspidate-tipped bracts; stigmas slender, filiform, almost plumosely hairy.

A. TUBERCULATA Moquin-Tandon, in DC. Prodr. *A. rusocarpa* Moquin-Tandon, l. c., not of Michx. *A. cannabina* var. *concatenata* Moquin-Tandon, l. c. *Amarantus Miamensis* Riddell, synopsis. *Montelia tamariscina* Gray, Man., Bot. ed. 2, 370, and ed. 5, 413, partly, especially the var. *concatenata*. River-banks, shores, etc., in the interior. Lake Champlain to Iowa and Texas. Sometimes erect, and from one to four feet high, sometimes spreading or prostrate in sandy or gravelly soil.

(3.) PYXIDI-MONTELIA. Utricle thin and small, shorter than the cuspidate-tipped bracts, circumscissile in the manner of true *Amarantus;* fertile inflorescence in slender virgate paniculate spikes, less glomerate than in the preceding; stigmas similar or shorter.

A. TAMARISCINA. *Amarantus tamariscina* Nutt., in Trans. Am. Phil. Soc., n. ser., v. 165. *Montelia tamariscina* Gray, l. c., in part. Arkansas to Texas and New Mexico.—ED.

SOME NEW ROADSIDE PLANTS.—It is always interesting to watch the river banks and roadsides, for new species are very apt to be found in such localities. This season several species new to our county flora were found along the roadsides, and they were all on their way from the western plains to the east. Last year a very small patch of *Artemisia biennis* was noted, and this year a road southwest of the town is lined with thousands of specimens. *Euphorbia marginata* has come in the same way, until now it is quite at home. *Erigeron divaricatum* was found this year for the first time and it was evidently a late arrival. It was quite abundant, growing with *Verbena bracteosa* and *V. officinalis*. At a hasty glance it is very apt to be passed by for depauperate forms of *E. Canadense*, and probably has been passed by in that very way, but when once intelligently seen is very readily distinguished, even in riding by.—ED.